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ABSTRACT

Volume 3 of a five-volume portfolio of studies reflecting different facets of the concept of education for rural development contains three studies on health and nutrition. The first study, "Health Education in Rural Development," by K. D. Ariyadasa (Sri Lanka), discusses the role of education in the transmission of health and integrated rural development and provides a global view of the problems and issues of health education in Asia, pointing to the need for effective use of resources, better insights into socio-cultural factors that promote or impede changes in health practices, motivation and harnessing the potential of community women and youth, and promotion of intersectoral cooperation and community participation. The case study of the nutrition education program at Satya Wacana University, by Willi Toisuta (Indonesia), describes an implementation model based on training community women, local leaders, and youth to act as change agents; providing incentives and competitive opportunities to motivate community participation; and developing action programs to give knowledge of nutritious food and skills to children at primary schools. The last study, "Health Education for Rural Development: Findings of Research," by Evelina A. Mejillano (Philippines), reviews 10 research studies, and lists some relevant findings, conclusions, and recommendations. (AH)

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Asian Programme of Educational Innovation for Development

Volume 3
Health and nutrition education

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The portfolio on "Education for rural development" consists of five volumes:

Volume 1 – Education and the rural community

Volume 2 – Education for disadvantaged women

Volume 3 – Health and nutrition education

Volume 4 – Manpower, science and technology and extension education

Volume 5 – Inter-agency and inter-institutional co-operation

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PREFACE

The developing countries of the world today, particularly in the Asian region, are passing through a critical period. Most countries are faced with the problems of growing population, recurrent food shortages, illiteracy, malnutrition, environmental pollution and economic and social disparities. There is a big gap between those living in the urban and rural areas. The rural poor, who constitute the overwhelming majority of the population, are often neglected and deprived of the benefits to which they are entitled within their own societies. Thus the majority of them are malnourished and in poor health, illiterate or with a low level of education and with low income. The picture is even more gloomy with respect to women. This unhappy situation stems from a variety of factors, psychological, cultural, social, educational, economic and political.

The plight of these impoverished men and women has been felt by all the governments and several national and international agencies. Ways and means to solve the problems have been proposed and actions taken under various kinds of projects. There is a call for priority to be placed on agrarian reform and direct aid to the rural poor and for improvisation of simple low-cost technology to increase production and improve the processing of food and the living standards of the rural poor. Attempts have also been made to extend the services of government such as health and nutrition and education services and agricultural extension services. But in most cases these services do not reach the low income and deprived groups, either because they are not aware of the services available and do not know how to make use of the services or because of other socio-economic reasons.

In the area of education there has been a shift in priorities which entails more emphasis on distribution of educational services and equality of access to education. This change is prompted not only by humanitarian concerns, but also by important political and economic considerations. Dissatisfaction with the inability of the existing education system to cope with the problem of disparities has impelled the search for alternatives to formal education. Education for rural development as a new concept in education has been introduced. It is the kind of education which covers activities where educationists, community leaders and other groups are prepared to collaborate effectively with other agencies within a broadly-conceived multi-dimensional programme of rural transformation. The focus of the activities is on the development of rural communities. Education for rural development, i.e. education linked with the programme of rural development, is provided mainly through informal and non-formal modes, while at the same time linkages are established with the formal education system. The nature of the educational programme is dictated by the "total rural development" programme, its multi-agency character and multi-pronged approach to the problems. As seen in the countries in Asia, a non-formal educational programme includes a variety of aspects of education such as health and nutrition, agriculture, general education and skills development. In some countries science and technology education in the form of extension or out-of-school education is provided as an instrument for sustained improvement of technology in rural areas. Special programmes for women and deprived groups have

also been launched to remove the socio-economic disparities between men and women as also between the privileged and underprivileged sections of the two groups.

This portfolio is a compilation of studies which reflect different facets of the concept of education for rural development. The thrust is towards improving and transforming the economic and social life of the rural poor, where the basic human services are critically important – food, nutrition, health and education.

The publication is in five volumes, each of which is preceded by an introduction which gives the summary of the volume.

The first volume describes in brief the status of rural education in five countries, India, Indonesia, Nepal, Philippines, and the Republic of Korea. Problems in rural education in the countries and ways to solve such problems are also discussed.

In the second volume, experiences of two countries, India and Thailand, in the education of disadvantaged women are presented, showing how educational programmes are planned to minimize the disparities between the advantaged and disadvantaged groups.

The third volume deals with the problems of health and nutrition education in general, and the case study of the nutrition education programme in Indonesia and a study on research findings in health education in the Philippines in particular.

Volume 4 of the publication presents three studies on three aspects of rural development. The first is on manpower planning and training programmes for self-employment in rural areas. The second study discusses out-of-school science and technology for rural development, and provides examples of linkages between science activities and rural development. The third study is on extension education aiming at integrated rural development.

In the last volume of this publication, two studies on inter-agency and inter-instructional co-operation in rural development are presented, one by Pakistan and another by Thailand.

The Asian Centre of Educational Innovation for Development (ACEID) is grateful to the authors of the studies for their contributions to the preparation of this portfolio. It is published in the hope that it will be of help to teachers and administrators, as well as those concerned with education in rural areas in their efforts to raise the social and economic status of the rural poor.

INTRODUCTION

In this volume are three studies on health and nutrition education. The first study on "Health Education in Rural Development" discusses the role of education in the transmission of health and integrated rural development. It provides a global view of problems and issues of health education in Asia, pointing to the need for effective use of resources, better insights into the socio-cultural factors that promote or impede changes in health practices, the need to motivate and harness the potential of women and youth in the community, and the need to promote inter-sectoral co-operation and community participaton. Formal, non-formal and informal education are considered as important modes of intervention. They are considered as complementary elements which must be co-ordinated. Several social and educational strategies for health development are also proposed which include, *inter alia*, a strong emphasis on "preventive health" and not only "curative health", use of modestly trained indigenous people for first-line health services, use of the potential outreach of the formal education system, use of teachers for health promotion work, and use of the network of friends, neighbours and co-workers.

The case study of the nutrition education programme at Satyawacana University, Indonesia, describes a model showing the possibilities of channelling the theoretical knowledge gained by graduate students in academic courses into a practical, action-oriented nutrition programme. The project aims at raising the awareness of rural people of the importance of nutrition for the growth of their children, by demonstrating ways and means of preparing and cooking a balanced diet and introducing a variety of action programmes. Preparation of a longitudinal study of the relationship of nutrition and educability of children is also envisaged. The strategy of programme implementation is based on the training of women, local leaders and youth in the community to act as change agents; provision of incentives and competitive opportunities to motivate community participation; and action programmes to give knowledge of nutritious food and skills to children at primary schools.

Under the project, not only the children and the people benefit from the services and activities, but the graduate students themselves have also gained many new insights on problems related to health and nutrition. Students have also an opportunity to relate what they learn from project work to their academic activities, thus establishing linkages between formal and non-formal education.

The third study entitled "Health education for rural development: findings of research" is a review of ten research studies on health education for rural development. The main purpose of the review is to list some relevant findings, conclusions and recommendations of these studies. The studies under review reveal many problems which are the causes of poor health. These are, for example, socio-economic problems such as a high rate of migration, poor sanitary facilities, and the absence of a unifying national idealism; cultural problems such as superstitious beliefs and traditions relating to the cause, transmission and control of diseases; environmental problems due to isolation and lack of communication leading to malpractices such as the use of folk medical services; and problems of lack of knowledge and acquisition of wrong information. Some of the studies also provide evidence of more desirable health practices after a period of intensive public health programme activities.

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HEALTH EDUCATION IN RURAL DEVELOPMENT

by

K.D. Ariyadasa*

Introduction

The literature on development reflects a progression in thinking from identifying development with the conventional measures of economic growth such as increases in aggregate or per capita national income to the realization that development should focus on the socio-economic well-being of the people. Mere increases in output, implying economic growth, do not necessarily result in the enhancement of the quality of life of those in the lower deciles of income earners. It has been found that increased economic growth has resulted in more skewed income distribution patterns between the rich and the poor, the haves and the have-nots. Growth is, therefore, viewed as "a necessary, though not a sufficient condition, for socio-economic development". This progression in thinking, this awareness, is the result of decades of involvement in regional developmental activities, using such theories of regional spatial structure as the central place theory and the growth pole theory. Via these theories and via this phase of development, we have now come to the realization that the development of the people should be achieved on the basis of an integrated approach considering the basic needs of the people.

In the developing countries of Asia rural people predominate, constituting sometimes almost 80 per cent of a country's population and, by avocation, they are engaged mainly in agriculture or in agriculture-related occupations. In developing countries, except for a small percentage of urban poor, they also constitute the vast majority of those who come below the accepted official poverty line. In a basic needs approach to the development of the traditional rural sector, health, therefore, should rank very high. Health can be viewed as both consumption and as productive investment. Considering the very large numbers of very low income earners in the traditional rural sectors of developing countries, the consumption aspect of health as much as the investment aspect should figure very prominently in any scheme of integrated rural development. The consumption and the investment aspects again are very much inter-dependent. The opportunity costs of the denial of health as consumption will naturally be reflected in lower productivity, in the waste of human potential both physical and mental, in the depletion and non-utilization of a country's human and natural resources and in individual and aggregate misery. Non-productivity and waste will in turn result in lowered output and impoverishment, leading to scarcities of resources for consumption.

In this context this paper will attempt to discuss the role of education in the transmission of health in integrated rural development. The sections that follow will attempt to highlight some of the problems and issues, modes of intervention and the educational and social strategy options available. In the discussions, an attempt will be made to focus attention, inter alia, on the following concerns and aspects:

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* Mr. K.D. Ariyadasa was formerly Additional Director-General of Education, Ministry of Education, Sri Lanka.

a) Inter-relating formal and non-formal education in order to enhance the involvement of women and youth in rural development;

b) Co-operation between various development agencies such as health, agriculture and industry for a co-ordinated approach to health education; and

c) Community participation and leadership with emphasis on participatory planning, execution and evaluation of programmes.

Some problems and issues

Firstly, whoever plans programmes of health education for rural development should consider the absolute necessity to maximize the use of available resources, where necessary duly adapted and improved for the purpose, considering the magnitude of the task involved in the health education of the people of the traditional rural sector, and considering further the scarcity of resources available. Already formal education consumes such a large proportion of national budgets that developing countries find it difficult, if not impossible, to allocate further resources to extra-educational endeavours, however worthy, against the competing claims of other development programmes. The position is further aggravated for developing countries through adverse trade balances resulting from price increase in energy and capital equipment as against the fluctuations in the prices of primary products.

Any new operation planned for the transmission of health education should be cost effective by a factor so high that its replication over a region or over the whole country should, in the first place, cause no appreciable burden on the national exchequer and, in the second place, should result in visible and demonstrable improvements in the health of the people.

Approaches and techniques based on western models of development may not necessarily succeed with the traditional sectors of developing countries, considering the fact that, socially and culturally as well as developmentally, the two worlds are very far apart. The fact has also to be recognized that Third World countries will not change and develop on the same lines as developed countries. The developing countries have to be understood in their historical, cultural and social settings. Especially in an area such as health, which touches intimately the cultural practices and life styles of the people, not to appreciate the differences and not to make such understanding the basis for the formulation of whatever approaches are deemed necessary would be to make a vital mistake. Therefore, the emphasis placed on exogenous models and approaches in promoting changes in the behaviours of rural people has to be discounted. The concept of endogenous development with exogenous factors being brought in only where absolutely necessary and relevant has much to commend itself.

It is in this context that health educators should concern themselves with the sociology of the development of the rural sectors of Third World countries. It has to be noted that the educational transfer of cognitive (knowledge) and affective (values, attitudes and sensibilities) content from the developed to the developing sectors, even in intra-country situations, requires careful study and understanding of the rural sector.

it therefore follows that the health education of rural people is not a thing that can be achieved by those who know the substance of health or, for that matter, by those who know the substance of education. Here we are confronted with a very complex situation of rural people of all ages working in agricultural or agriculture-related occupations, belonging to various socio-economic and religious groups, heirs to their own cultures going their several ways in life. This is why the insights of the sociologists in regard to socio-cultural factors that promote or impede changes in cultural practices and life styles become necessary.

Sociologists lay emphasis on the need to understand the differential responses to change and the emerging patterns of entrepreneurship at village level. Though these have been studied mainly in the context of the economic development of farming communities, they neve·theless have their lessons for the transmission of education because the social settings are the same.

This is an age when the youth of a country are very much to the fore, and this pattern of entrepreneurship seems to seep down to the traditional rural sectors as well, to judge from what is taking place in the developing countries of Asia. This indicates the need to motivate and harness the youth in social activities at all points, from planning to execution, evaluation and replanning. Health education for rural development will be the loser if this motive power residing in the youth of the traditional sector is not utilized in the provision of better healthcare to a country's rural population.

Likewise, though good health will depend on a multiplicity of factors and a great many promoting agents, the task of promoting health at the level of the home and through the home, in the local community in such vital matters as environmental sanitation and hygiene and in nutrition, will devolve to a very great extent on women. In any case the most vulnerable target groups, so far as health is concerned, are the infants, the children, and the pregnant and the lactating mothers. Hence the necessity to involve women in promoting the health of the rural sector should also be self-evident.

Two of the main bases on which the Alma Ata Conference Recommendations, which have for their aim the provision of a satisfactory level of health for all the people of the world by the year 2000 A.D., rest are:

a) Inter-sector co-operation; and

b) Community participation and the fostering of self-reliance at the community and national levels.

Considering the health requirements of the populations most in need and taking into account the development problems these countries have to face and the interdependent nature of development, more especially the dependence of health on the other sectors of the economy, it should be clear that not much can be achieved without satisfying these two criteria. Health should, therefore, not be considered the preserve of any one sector. The improvement of the socio-economic standards of the people has as much, if not more, to do with the promotion of health as any other movement connected

with health per se. Hence the necessity of all the sectors of the economy, such as agriculture, industry, health and education, to act in concert, pooling their resources and integrating their strategies for providing health for all, is a factor that must be recognized. Even such action cannot succeed without the participation of the people and the fostering of self-reliance in them. Hot house experiments and projects that cannot be carried out by the people on their own have very little value. The people should be made to realize that it is within their power to better their conditions of health, as verily it is.

Another important matter that has come to be recognized is the hiatus between cognition and practice. This is a very complex matter that does not admit of a simple answer. In the propagation of health education it is best to view change from the perspective of the people to whom such advocacy is directed. To take an example, to persist in the advocacy of nutritional practices or sanitary measures that are not within the economic capabilities or the environmental possibilities of the people is to be extremely naive. Such advocacy can only make the people resistant to educational intervention, thus endangering the whole educational effort.

It follows that the advocacy of practices that go against deeply embedded cultural traditions and practices, too, should be viewed from the perspective of the recipients of such messages. There are cultural practices that are inimical to well-being and these may sometimes endanger life itself. In such instances strategies have to be carefully mapped out. As pointed out by the APEID Technical Group Meeting which met in New Delhi, India, from 15 to 24 September 1980, the positive aspect of this lies in accepting and integrating into the curriculum those simple, traditional practices in regard to nutrition and aspects of preventive and promotive health that have made the people of our countries survive through the vicissitudes of time. They have great educational value and are also easy to foster and reinforce because they are part and parcel of the lives of the people.

Modes of intervention

The term "health education" especially in the context of rural development can be associated rather narrowly with the term "health educator", a designation that is commonly attached to those professionals in health who undertake the health education of the out-of-school sector of a population. Considering the integrated approach to rural development and the role of the various government ministries, departments and other agencies in such development, and in the promotion of health, such a narrow association of functions has to be eschewed at the very outset. We should consider the total programme, bringing within its scope the total entrepreneurial effort that can be mustered both within government and outside it, to bring about the transformations that would lead to healthful living at the individual, the family and the community level. In this effort all persons and agencies that have a contribution to make should be involved.

Among these agencies formal education should get a very high rating. Firstly, it is a mode that is already there, organized and funded by the people through the State, and charged with the function of educating the young. The youth who enter and remain in it for varying periods of time in primary, secondary and tertiary education are the citizens

of tomorrow who, while imbibing knowledge, values and attitudes, can be the purveyors of such knowledge, values and attitudes to the rank and file of the citizenry throughout their lives. A child who enters school today at the age of five will be in his prime at twenty-five years with the dawn of the new millenium and, who could be better suited to carry the message through example and precept to the community at large? We will come to their importance presently in th section on social and educational strategy options.

Another mode that can be harnessed in the propagation of health in rural development is non-formal education. All organized forms of education in health outside the formal education system would, naturally, come into this category. Health education carried out by medical and paramedical personnel and health educators in clinical, field and other situations, whether it be in maternal and child welfare, nutrition, or other preventive and promotive aspects of health, come under this heading. All extension work and other special programmes carried out as part of special campaigns relating to special problem areas such as tuberculosis and malaria would also be subsumed under the umbrella of non-formal education.

Informal education is not to be discounted, especially so because in rural situations, if properly engineered, it can be exploited to achieve much that cannot be achieved through other means. The term used is "engineered" and not "organized". It is here that the insights of the sociologists and communication specialists are especially useful. Much can be achieved through these informal channels of contact among village folk, provided we understand the power of informal person-to-person communication that takes place in the work-a-day world of village life, and provided we also try to understand the structured patterns of village life and utilize those who can carry the right message to the right place so that it has maximum effect on the people.

These modes then – the formal, the non-formal and the informal systems of education – each on its own or more effectively in relation one to another, supporting and reinforcing one another, are the modes of intervention that can be utilized for health education in rural development.

Then there are certain grey areas where the identify of one merges into the other, where the distinction between, for example, the formal and the non-formal systems gets blurred and where the frontiers are crossed and the complementarity of the systems are revealed in their working. These are some of the best examples of inter-relationships that one can conceive. It is in this context that Commission I, reporting to the Fourth Regional Conference of Ministers of Education and those Responsible for Economic Planning in Asia and Oceania, expressed the view that it was unhelpful to draw a line of demarcation between formal and non-formal education, and that they were complementary elements in a national educational strategy and require co-ordination regardless of their sponsoring departments or ministries.

Generally, the formal, the non-formal and the informal education systems are considered a continuum in the process of life-long education. But they are also strategies that converge and can be used together, one with the other, to strengthen and reinforce any educational effort. Much has been said of the formal and the non-formal systems and

very little of the informal. Interactional and social network analyses will one day prove the explosive potential that lies latent in informal strategies. One has only to consider how working by itself, in isolation, informal communication takes hold of the minds of the young and the old, against all the salutary influences brought to bear on them through the formal and the non-formal systems, and veer them to anti-social activities through the interaction of mind on mind in informal contact. Even as delinquency and crime thrive in the under-world through the power of informal communications and contact, even so can this same force or strategy be used, if understood and judiciously engineered for the good of man and for the development of society.

There are other opportunities too that are not to be missed. These provide entry points for health education in the non-formal education programmes conducted by other ministries and departments of Government and by other agencies. The writer, who functioned as consultant in non-formal education in project identification relating to an integrated rural development programme of a very rural revenue district in Sri Lanka in 1979, had this observation to make in regard to vocational training and the inclusion of health education in such training:

"Training programmes may not, as now, be centred round one vocation only. Considering their main and subsidiary vocational interests and considering that support incomes become very handy to the people during both normal and difficult times, the programmes must aim at giving a training in a trainee's main vocational interest and at least one another subsidiary vocational interest concurrently. Considering that the opportunity of getting a person into organized training is too valuable an opportunity to be missed without giving him an education in other things that matter and, considering further that he may never be caught up in such an organized situation again, it is necessary to recognize that along with the vocational training he should be exposed to other awareness programmes such as on nutrition, preventive aspects of health and family planning."

Based on this guideline the content of training outlined included in addition to training in a main and a subsidiary vocation the following:

(i) Nutrition;

(ii) Health (preventive aspects);

(iii) Family Planning;

(iv) State services, such as credit, crop insurance; and

(v) Self reliance and self help, such as in purifying their drinking water using simple solar devices.*

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* Sri Lanka, Ministry of Plan Implementation, *Integrated rural development programme for Hambantota District*, (Project Identification) August, 1979. Colombo, 1979.

Sectoral Reports. Resources Development Consultants Ltd., Colombo.

These are the entry points that health education should seek in programmes of other sectors, such as in agriculture and vocational training. This in effect implies not only the necessity to inter-relate formal, non-formal and informal education but also the necessity to co-ordinate and integrate the various non-formal education programmes conducted by other ministries, departments and agencies.

Social and educational strategy options

The discussions in sections 2 and 3 on problems and issues and on the modes of intervention throw up pointers to the social and educational strategy options that are available in the promotion of health education in integrated rural development. These have, nevertheless, to be carefully considered against the historical, social, cultural and development background of each country. Notwithstanding this requirement, however, for a majority of developing countries the options indicated in the above discussions appear to be relevant. Others could modify them suitably to relate to their needs.

We could make a start in cataloguing some of them by paraphrasing a statement of Commission I, referred to earlier in this paper: if the goal is to build a participatory society, then education should be a participatory experience. Health is for the people and, if so, the participation of the people in health activities and in health education should be secured at every point. In this connection, another insight thrown up by the Education Sector Policy Paper of the World Bank of April 1980 appears relevant. Discussing "Efficiency of Education and Training for Rural Development" the World Bank avers that because middle level and senior level extension staff are city bred they are unable to communicate sensitively with farmers, and that they also lack experience in the practical aspects of agricultural production. If this is so for agriculture, it is in fact doubly so for a very sensitive area like health, that touches on the cultural practices and the life styles of the people.

This is strikingly demonstrated in the statement of a consultant in health who was working in an integrated rural development programme. This is what he had to say:

". . . . . assists households in constructing latrines, but the type constructed is the water seal. Many water seal latrines constructed in health centres in the district were found to be blocked with dried fecal matter. Those who have little water for washing themselves should not be expected to pour buckets of water into water seal toilets. It would be more realistic to encourage the construction of pit latrines, seeing that nearly all of the 60 per cent of rural households that have latrines have constructed pit latrines! Such cultural inadequacies emerge when city people think of country people, cast their problems in city terms, and assume that certain facts and conditions exist, without validating them by maintaining direct contact with country people in their homes. The need for planning at the grass-roots level rather than centrally . . . is well illustrated here."

These views and observations obviously point to the need to have clear and explicit strategies taking into account the socio-economic and cultural factors that are implicit in a given situation. In short, they point to the overall need for community participation in the process of planning, implementation, evaluation and replanning.

Here we need to take counsel with the sociologists. Their insights in regard to such matters as the socio-cultural factors that promote or impede change in the structured patterns of village life need to be carefully studied. In the selection of leaders, opinion leaders and change agents for project work these have an important bearing.

The agencies must be mindful of the power and the motivation that reside in the youth of the rural sector. Again, as stated earlier, another of the matters that needs reiteration is the fact that most of the health problems affecting the most vulnerable groups centre on infants, children and women in the home environment and that, therefore, in any educational effort centring on the home the woman of the home must necessarily participate. In getting the participation of women of the rural sector the organizers must pay due heed to the position of the woman in rural society, in the nuclear and the extended family, in the various cultural milieu in which she finds herself.

Let us here briefly recapitulate in very general terms the health problems that developing countries have to face. That should give us a fairly clear perspective of the types of responses called for. The "Assault on World Poverty" in its introduction of the causes of poor health in developing countries has this to say:

"Even though life expectancy is increasing and the incidence of specific diseases, such as malaria, has been reduced through eradication programmes, poor health persists as a major problem in many developing countries. The conditions responsible for this situation need to be better understood if effective policies are to be formulated. Climate, cultural practices and life styles undoubtedly have an impact on health. However, the socio-economic characteristics of a population have an even more pervasive influence."

Of the factors it enumerates as causes of poor health the following may be taken as directly relevant to the rural sector: high fertility rates which directly affect maternal mortality; population pressure leading to reduced land-man ratios and attendant problems; malnutrition; unsanitary conditions and housing leading to the contamination of food, water or soil, resulting in the spread of diseases. Listed among the factors that cause the improvement of health are: improved water supply and sanitation; more spacious, well-ventilated living conditions, and better nutrition.

It sounds so simple though it is so complex. It sounds so easy to secure though it is in fact so distant and difficult to get. The socio-economic factors are undeniably what make it so distant and difficult to secure through education alone, though education can contribute so much to ameliorate the conditions and to minimize the incidence of morbidity and mortality. It is for this reason that strategies have to be carefully thought out and those in whom the power to change lies should be made the focus of the educational programmes.

The fact has also been emphasized that curative health care can do little to alter the incidence of disease, unless there is a strong emphasis on preventive health in the services offered. This is where education comes in. But even as education should, as a matter of priority, focus on those most in need it has also to ensure adequate coverage, if it is to be effective.

Royal D. Colle, Professor of Communication Arts at Cornell, writing in "The development communication report" of July 1979, makes this very important statement in regard to a rather controversial area:

"Various kinds of medical 'auxiliaries' (such as midwives and herb doctors) have provided health services to their communities for years. What appears more prominently now is an emphasis by more organized, formal health programmes on using modestly trained indigenous people for "front lines" health service delivery. Reasons for this official movement away from the western model of health care delivery vary. One justification is economic: it costs less to train and pay a health promoter than a doctor or nurse. Sometimes there are not enough of the highly trained people who can or will serve in rural areas. Frequently, too, indigenous paraprofessionals are considered more effective than other health personnel because of their closer identify with the client population."

This is the strategy that is now being advocated and attempted by most developing countries and it appears to be the only strategy that has a chance of success, for a number of reasons which we will not try to enumerate here. Be it in providing medical care along with health education as in the case of the bare foot doctors of the People's Republic of China and the campesinos of Project Piaxtla in Mexico, or in the use of health auxiliaries as in Costa Rica or be it only in health education through health volunteers and community health workers as in some Asian countries, it is the strategy of using "modestly trained indigenous people for front line health service delivery" that is the social and educational strategy of the future for developing countries. It is here that 'indigenous' youth and women should participate increasingly.

This is certainly not to deny the qualified medical specialists and the health educators their place in the scheme of things. Their place as organizers should be in the background, given the fact that indigenous people, properly directed, are better suited for front line work. This surely is the way to promote participation and involvement and to foster self-reliance.

Again in health education for rural development, a very important strategy that will yield high dividends is to harness the potential of the outreach of the formal education system. In the formal system, health should get its due place in the total curriculum through health instruction, healthful school living and health education through the school health services. But in addition to this, there are very great possibilities of reaching out to the family and the local community through the school. It is a two-way process which, while helping the family and the local community, also provides vital learning experiences to the children. I should here wish to recapitulate what I said in this regard in a paper on schools and primary health care published by Unesco, Paris in the series *Child family community*, (December, 1979).

"Considering all organized institutions set up by society, it could safely be asserted that the primary school is the one through which *the largest mass of humanity of a given age range* pass. That being so, it should be taken as the institution that gives *the highest pay-off* and provides *the greatest opportunity* in influencing human behaviour."

Here we have a vast mass of humanity and through them we can reach out to the family and community. I quote again from the paper:

"Consider those most in need – the under-served and the under-privileged. In these groups not many are literate or have been schooled. They are mostly illiterate or semi-literate. Even if literate, they may know very little about healthful living, about nutrition, communicable and non-communicable diseases. Since we have no organized programmes of educating them, one of the ways of reaching out to them is through their own children."

Here, the points made at the APEID Technical Working Group Meeting held in New Delhi, India, referred to earlier, is worthy of attention:

"The situation of conflict that can arise between knowledge, values and practices the child imbibes in the school, on the one hand, and in the home and the community, on the other hand, is something peculiar to health education. If the school programmes are weak, the home and community influences will prevail. If the school programme is delivered efficiently, for instance, if in the affective domain a child can be made to value and champion what he has been made to imbibe in the school, then, he becomes a vehicle through which the school could reach out to the family and the community. That would be a treasured contribution to national development efforts and to the attainment of the aim of the Alma Ata Conference recommendations, namely, the provision of an acceptable level of health for all the people of the world by the year 2000 A.D. In view of the magnitude of the problem this poses, it was felt that without the education of primary school children in health and without the contribution they can make to the achievement of this aim by reaching out to the community, the realization of the lofty aim of the Alma Ata Conference may only be a distant dream."

The obvious resources and the strengths of the school system reside in the capacities of the pupils and the teachers. The not so obvious strengths reside in its location in space and in those invisible but nevertheless strong ties it has with the community. Spatially, the schools constitute a vast network reaching out to all the corners of a country and are, therefore, ideally placed for the delivery of health education. The ramification of ties that bind the school and the community is exemplified in this statement taken from the paper quoted earlier:

The connections the schools have with the community are very real. Almost every member of the community has at some time or other had some direct link with a school, either as pupil or as brothers and sisters of others who are or were pupils, or as parents and wellwishers, or as people who have been drawn to a school on various cultural, social or religious occasions. Then there are the parent-teacher associations, school development societies and school functions and village festivals that centre round the school. Then, again, there are educational and extension projects that take the school to the village or, conversely, others that bring the village to the school.

The strategies employed to propagate health education in the rural sector should exploit these to the fullest. For here we have organized institutions manned by competent people, the teachers, who are readily available for undertaking this work. Besides, it is clearly their responsibility since "the under-served and the under-privileged are but

the pupils, the drop outs and the non-school goes of yester-year". The types of projects that can be mounted depend on the needs and the practices deemed desirable in each country context.

Another strategy that will pay dividends is to win over the teachers working in rural areas for health promotion work, as is done in some parts of India and more especially, in Paraguay. If the right approach is made one can be surprised by their response. As in Paraguay, if these voluntary workers are given, say, fifty families as their special responsibility the coverage could be exceedingly high. The training that is given is simple and modest:

The participating teachers were given a two-week training course during the summer vacation that focused on the delivery of educational, curative and preventive services in such areas as maternal and child health, nutrition, first aid and sanitation. Working in groups of 15 to 20 the teachers received essential theoretical and practical training. They also came into contact with the hospital environment and with those people with whom they would later work.

This training could of course be strengthened with further periodical in-service training. The inputs are not much but the results are extremely gratifying, as summed up by the organizers: "Thanks to the health work the teachers have been doing we have seen many changes in environmental health, and in maternal and child health. It is a lot of work for us but we are willing to do it and we are making a contribution to the country at the same time."

According to the educational supervisor of the project, "the school has become the centre of the community through this programme". What a wonderful way of relating the formal and the non-formal systems of education.

Let us here not relegate informal education to the background for, as stated earlier, in rural development which encompasses the traditional sector, the age-old channels of communication among the rural people have much potency in introducing ideas and in diffusing them, and also in reinforcing and supporting the programmes of education directed at them.

What is necessary is to recognize the importance of this channel of communication as an important strategy option and to engineer it by conveying the right messages from the right people at the right times and places, so that the maximum and most effective response is received. This same strategy could well be tapped in getting first-hand feed-back from the people in the evaluation of programmes. It has been found all too often that evaluations carried out by those involved in programmes are far too one-sided and do not reflect the true state of affairs.

These are some of the social and educational strategy options that could be considered. What is necessary to realize is that the top-down methodology of transmission and evaluation is in itself not sufficient.

Conclusion

What has been attempted in this paper is to consider the goals of development as presently conceived, as against the aims of economic growth per se and, within the ambit of these goals, to consider some of the programmes of integrated rural development. In the light of this discussion, the modes of intervention and important social and educational strategy options that are available for health education were considered. The strategy options must not by any means be considered exhaustive. In the discussion of strategy options an attempt was made to look at the broad approaches that should in fact be considered; but it should be clear that within these broad approaches, a multiplicity of paths to attain the aims and objectives of health education could well be mapped out. Nothing that has been said should be taken as limiting or circumscribing the many ways of implementing health education programmes.

What is necessary in considering strategy options is to think of the goals, make a realistic and down-to-earth appraisal of the resources available, consider the insights offered by successful programmes and projects and the further insights made available by educationists and sociologists, and consider what can be done in the context of each country, considering its historical, social, cultural and development background. Sometimes the insights of the sociologists are not directly relevant but, nevertheless, they do provide useful pointers that could be extrapolated and considered for application in other settings.

This should bring out the multidisciplinary character of health education in integrated rural development. To lose sight of this or to minimize its importance would be to lower the effectiveness of programmes.

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INTER-DISCIPLINARY RESEARCH, MATERIALS DEVELOPMENT AND TRAINING FOR RURAL DEVELOPMENT LINKED WITH POST-GRADUATE STUDIES

by

Willi Toisuta*

Rationale

Eighty per cent of the Indonesian population lives in rural areas and the majority of these depend on agriculture for their livelihood. Because of the population density of Java, the majority of Javanese farmers have an income below the national per capita income – an income that is minimal and often inadequate to meet their basic nutritional needs. Traditional diet patterns do not consciously pay attention to the nutritional balance of the diet or to methods of food preparation, so that these often exacerbate the problem of poor diet arising from low income. Poor nutrition in early childhood means high infant mortality and morbidity. Nutrition in early childhood is an important pre-determinant of adult health and of children's ability to benefit from formal education and to develop intellectually. Little wonder that improved nutrition is regarded as a most urgent need in the rural areas of Java (as well as other parts of Indonesia) by both government and non-government agencies.

A university, particularly a university in a developing country, cannot simply limit itself to preparing students to obtain formal qualification through required lecture courses, assignments and laboratory work. There is a great reserve of knowledge which is accumulated by those working in a university which is urgently needed by the community in which it is placed. The university has a responsibility, through interested staff and students, to place its knowledge and skills at the disposal of the community in the support of community or government sponsored programmes to improve "the quality of life" of the ordinary people.

The quality of university education itself can be greatly improved through this involvement, as those involved will be constantly challenged to look at the relevance of the university curricula to the needs of society. They will also need to learn how to communicate with those of little or no education and to develop the complex skills of being a change agent, sensitive to and accepting of the desires and needs of others, whose background may be different from their own. These skills, so urgently needed by Indonesian society, cannot be taught through formal courses. All too frequently new university graduates have neither the motivation nor the skills to participate in urgently needed development at the grass-roots level because their education has taken place in an institution which is too isolated from the complex problems of the community. Students have not been given sufficient opportunity to seek practical solutions to problems in their society.

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Satya Wacana Christian University is located in a small town in the midst of a rural area in Central Java. It draws its students not only from Java but also from the outer Indonesian islands and seeks to prepare graduates of high idealism to serve the community through the churches, schools, government and private offices.

Satya Wacana's faculties include education, agriculture, biology and economics, all of which can make a valuable contribution to a comprehensive nutrition education programme. The enthusiastic response of staff in the local Department of Health who offered to help train students and university wives as village nutrition educators and to help in the preparation of a nutrition handbook made such a program feasible. The support and the encouragement of the local leaders in the four villages selected for our initial programme, confirmed our impression that the time was ripe for our intervention.

What follows should be read not in the search for a new contribution to either a training strategy or to knowledge of rural development. Instead it is a description of a model, which we have experimented with to show the possibilities of channeling the theoretical knowledge gained by graduate students through academic courses into a practical, action-oriented nutrition programme. The experience gained has opened up new possibilities for university teaching and learning processes where students are given the prime responsibility in interdisciplinary research to help solve rural problems.

The combined approach of formal and non-formal education should encourage innovation in traditional university teaching on the one hand and rural development on the other hand.

Design of the Nutrition Education Program (NEP) at Satya Wacana University

Student-based, interdisciplinary programme. Many studies on nutritional problems in rural areas have shown that lack of nutrition cannot be attributed to any single cause.

There is a positive correlation among factors such as over-population (large families), the small size of agricultural land owned, the number of landless, low income, poor housing and traditional dietary patterns. Problems such as poor health conditions and sanitary practices, low motivation for schooling, and high drop-out rates in schools often accompany these problems. These together may form a chain of poverty for the majority of the population living in rural areas.

The complexity of the situation demands an interdisciplinary programme.

Our aim is to help the people through a nutrition education programme which basically is designed as a student-based programme, meaning that students will take the major responsibility on behalf of a university. The feasibility of such an approach will be tested through this programme. The Deputy Rector for Planning, Development and Relations of the University, by design, is an equal partner in a steering committee consisting of post graduate students from the schools of education and agriculture.

Village profile and the need for a nutrition education programme. A preliminary survey was designed and undertaken by under-graduate and graduate students. It focused on obtaining information about:

Health and nutrition education

1. Demographic data including employment;
2. Agricultural processes;
3. Educational background; and
4. Health practices.

This background information will be related to a study of a sample of primary school children to see whether there are indications that their scholastic achievements, as evidenced in school records, are related to parental educational background, parental income and the quality of nutrition in the home.

The students, therefore, started by:

1. Designing an interview instrument for parents and teachers;
2. Observing and studying agriculture patterns and practices, checking the physical structure of the agricultural land; and
3. Utilizing the standard arm-band, to measure the circumference of the upper arm of children identified for the sample.

Students of the faculties of education, agriculture, biology and economics surveyed the four surrounding villages within a radius of 40 km. of the University. Thirty-five to forty children, studying in class I to IV (ages 6-9 years) in each village with good, average and low performance in science, social science and mathematics, were stratifiedly sampled and selected at random.

The teachers and parents of the selected children in all the four villages were interviewed. When the survey was completed, the students had interviewed about 140-160 children and 150 families in the four villages.

Findings of the survey and the recommendations for action programme. Utilizing standard statistical methods such as correlation analysis and the chi-square technique that they studied in their lectures, the students obtained information ranging from the village monographical and topographical profile, land utilization for agricultural, demographic data, sanitation, to the educational and socio-economic backgrounds of parents distributed into different types of work and income-earning activities.

Some basic information which is directly related to the state of child nutrition in these villages can be summarized as follows.

1. *Nutrition of children and scholastic performance*

   It was found that there is a strong indication of correlation between poor nutrition and poor scholastic achievements. Having established a scale for: (a) good; (b) average; (c) poor nutrition of children, the four villages A, B, C and D were studied with the result that 30.55 per cent of children in Village A, 52.63 per cent in B, 38.11 per cent in C, and 54.29 per cent in D, were

categorized as between poor and average standards of nutrition. The relationship between nutrition and scholastic performance can be seen in Table 1.

Table 1. Relationship between scholastic achievement and nutrition

Achievement	*Nutrition*											
	Good				*Average*				*Poor*			
Village	*A*	*B*	*C*	*D*	*A*	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Good	–	–	1	–	5	4	3	3	2	4	4	5
Average	4	–	1	–	11	6	12	10	7	13	8	10
Poor	1	–	–	–	4	8	4	3	2	3	4	4

2. *Parental per capita income and nutrition*

The Department of Health has suggested that an acceptable standard of daily nutrition for an adult should consist of 500 gr. of rice; 75 gr. of *tempe* (soy bean cake), 50 gr. of vegetables and 200 gr. of fruit or its equivalent. This will require an average monthly income of Rp. 4,500 - Rp. 5,500. (based on prices in 1976).

When this is applied to parents of all the four villages it was found that 83.79 per cent of village A; 71.42 per cent of B; 52.63 per cent of C and 52.77 per cent of D were categorized as below the standard.

3. *Educational background of parents and nutrition*

The assumption that the parental educational background has some relationship with their understanding of the importance of nutrition of their children was supported by the result of the survey carried out by the students in the four villages: 66.7 per cent of parents in village A, 100 per cent of B, 94.6 per cent of C, and 74.3 per cent of D have no education or primary school education only. Their children turned out to be of below to average nutritional standard. These same children, according to their school records, have a mastery of science, social science, and maths within the range of poor to average.

4. *Protein consumption*

Protein intake of the majority of the families in the four villages is derived from salted fish and vegetables, as shown in Table 2.

Table 2. Source of protein intake of families

(In % from total sample)

Source	Village			
	A (%)	*B* (%)	*C* (%)	*D* (%)
A. *Animal Protein:*				
Meat	–	–	–	–
Salted fish	46.0	47.3	95.0	88.5
Egg and some meat	23.0	–	–	3.0
Salted fish + egg + meat + milk	31.0	–	5.0	8.5
B. *Vegetable Protein:*				
Soya bean cake (*tahu* and *tempe*)	–	–	21.0	43.0
Soya bean cake + other beans	35.5	23.7	25.7	25.7
Soya bean cake + other beans + vegetables	55.5	16.8	15.2	31.3
Soya bean cake + vegetables only	9.0	59.5	38.1	–

The quality of nutrition in the four villages can be interpreted from Table 2. The dependency on salted fish is very obvious for all the four villages. What is also common is vegetable protein derived from soya bean cake (*tempe* and *tahu*) and other combinations of different types of beans and other vegetables. No village relies on meat as this is far beyond their means. It is quite possible that villages A and B's lack of dependence on soya bean cake was not because it was regarded as unimportant for the diet but simply for economic reasons – lack of cash.

As *tahu* and *tempe* are specially prepared to contain more concentrated protein, they are sold in the market at a relatively higher price than ordinary uncooked vegetables and other types of beans.

5. *The gaining of insight*

When starting the survey the students took for granted, on the basis of evidence from earlier studies, that the cause of malnutrition is the overall effect of many factors concomitant with poverty. Although the famous "War against Ignorance" student campaign of the late seventies had political purposes, most students accept that ignorance is the prime cause of rural poverty. This assumption was clearly challenged by information collected during the interviews. Students came to trust the validity of what they had read when straight forward correlations were found between cases of poor nutrition and poor performance at school in their data for the villages surveyed. What really staggered them was when one case was found of a child from a "better" family background with good nutrition who was poor in his school performance. Even

more staggering was that fifteen cases of poor nutrition fell into the category of good school performance. This took the students back to the villages for clarification by parents and teachers before they finalized their analysis. In their final report they gave explicit explanations of these cases by stating that:

a) The general trend found was that subsistence farmers have no or very little education with very low income per-capita, which affects their capacity for providing good nutrition for their children. These children usually are found to have poor average performance in science, social sciences and mathematics in comparison with children of the same village who have parents with secondary education, who own more land and more fertile land, with average to "higher" income per-capita;

b) There are several cases where children of low-income families showed good nutrition and also children with poor nutrition who showed good performance in school, and some evidence which showed children with good nutrition with poor performance in school.

The important insight gained by students through involvement in serious studies of rural problems, in this case nutrition, was that although ignorance is interlinked with poverty, it is not the exclusive property of the poor of the rural areas. Their recommendation for a Nutrition Education Programme (NEP) will, therefore, include increasing family awareness of the importance of nutrition and the ways of preparing balanced diets using their home gardens.

Objectives of NEP

Objectives of the Nutrition Education Programme are:

a) To raise the awareness of the rural people of the importance of nutrition for the growth of their children;

b) To demonstrate ways and means of preparing and cooking a balanced diet utilizing locally available materials for the families of the rural people;

c) To introduce a variety of action programmes supporting the improvement and development of the program; and

d) To prepare a longitudinal study of the relationship between nutrition and educability of rural children.

Strategy of programme implementation

To be able to accomplish the objectives properly NEP was implemented in the following stages.

The first stage of the programme was concentrated on training women in understanding the role of nutrition and how to prepare nutritious food for their children and families. This was a one year programme from June 1977 to October 1978. At the end

of 1978 through to the beginning of 1979 this programme was evaluated for effectiveness of the method utilized, the appropriateness of materials (content), its usefulness and benefits to the rural community.

The second stage of NEP was designed to strengthen the training programme undertaken in the first stage by:

a) Training additional numbers of students as tutors and training local cadres in order to serve a larger number of villages which felt the need for NEP;

b) Producing different types of study materials ranging from printed materials to audio visual materials to be utilized in self-study groups in the villages.

The third stage of NEP had several integrated programmes:

a) Continuation and elaboration of the training programme for women with additional activities serving the needs of children under five;

b) Introduction of "intensification of home gardens" involving government agricultural extension workers;

c) Child to child programme involving teachers and local schools, administrators and supervisors; and

d) Starting adult discussion groups for women and men utilizing slide – tape learning packages designed and produced by students and professionals to review and reinforce materials studied earlier in NEP classes.

Overview of activities of NEP in three stages

Stage 1

a) *A preliminary survey* to study the agricultural and economic background and dietary habits of the community to be served is the first step. The survey results are used as a basis for determining the material and methods of helping. The survey was undertaken by eight students from the faculties of agriculture, biology and education and co-ordinated by the Student Senates of these faculties.

b) *Nutrition Education* was provided regularly on a fortnightly basis. Material was given in the form of theory and demonstrations of the preparation and choice of foods. Lecture and demonstrations were financed by the project but gradually the people were asked to donate those ingredients which were in their possession and the project provided the rest. The educators were wives of university staff and students who worked without an honorarium. They were given preliminary training by the project and the Regional Health Service of Salatiga.

c) *Monthly weighing of children under five.* Four scales were purchased for this purpose. By weighing children monthly it was planned to get

data about the children's nutritional stage before intervention and their development while the intervention was in progress.

d) To attract the community so that they would be prepared to participate regularly in the programme, and also as additional nutrition for under-five-year-olds who were generally undernourished, one kilogram of milk powder per child was provided free of charge (through the assistance of Church World Service).

e) A cooking competition for those participating in the programme was held to test how far the participants had understood the material presented. Prizes in the form of kitchen-utensils were provided by the project for the winners.

f) An evaluation survey to assess the effectiveness of the methods, the appropriateness of the materials and the usefulness of the programme for the villages was undertaken by Satya Wacana students.

The first stage commenced in June 1977 and ended in October 1978. The communities served in this stage were: Nayan and Wonokerti Hamlets, from the Pelem and Silo villages; Panggang and Mororedjo Hamlets of Kaliwungu village; Keduyon and Diplongan Hamlets of the Wates/Kopeng village and the Kemiri Hamlet of Salatiga village.

Stage II After assessing the results of the evaluation of Stage I, it was decided that the programme should be continued and developed further. A new plan with an extended programme covering a wider area was made. The second stage commenced in November 1979 (because no funds were available between October 1978 and November 1979).

a) Nutrition education continued as usual on a fortnightly basis, but the project provided only Rp. 2,500 per session (sometimes less). The balance was met by the community itself.

b) To prepare the community to serve each other and be self-sufficient, special training on nutrition was given to local leaders from 27 to 30 March 1980. Those selected were community leaders from the Family Welfare Program in the hamlets served plus the hamlet chief. The expense of this course was met by the project. The trainees were asked to function as partners to the project committee who were responsible for all activities and for overcoming all the problems in the district being served.

c) Two months after the initial training, it was clear that such co-operation was extremely good. As a result, in preparation for Stage III and to enable the whole village to be served (by including all the hamlets of the villages involved), it was planned to train nutrition educators from all the hamlets of each desa. This was carried out from the 26 to 28 of June 1980.

Meanwhile a course for interested students from Satya Wacana who will function as tutors in the hamlets was carried out at the beginning of the first semester 1980-1981.

Stage III a) To activate the women who had followed the nutrition program and intensify the nutrition education, study groups have been set up. These study groups are led by local leaders with guidance from the programme co-ordinator and student leaders. The materials to be presented were recorded in the form of drama. Four radio cassettes and batteries and a further cassette for recording purposes were purchased. The first series of recordings has now been completed.

b) To meet the need for nutritional food, a programme for intensification of the cultivation of home garden plots has been developed. The project set up an experimental plot as an example for the community and assistance in the form of vegetables and fruit tree seeds was provided for those who wish to try. Further plots are planned as soon as the wet season arrives.

c) Nutrition education seeks to educate parents so that they give constant attention to their children's health in order that they will grow and develop healthily. It is also thought to be helpful to give a basic knowledge of nutrition and environmental cleanliness to children so that they can help their parents to care for their younger brothers and sisters (the main target of the nutrition program is children under five).

For this reason, a child-to-child programme has been developed. The aim is to give knowledge of nutritious food and skills to children through their formal education at primary school. In preparation for this, a meeting of primary school teachers from the hamlets was held from 7 to 9 April 1980 to discuss the lesson material. This programme was carried out in the first semester of 1980.

Ways of overcoming other problems being faced by the villages involved in the programme are still being considered. In this, the project acts only as a stimulator, for the solutions must depend on the people of the villages themselves.

Critical analysis of objectives accomplished

The positive achievements of NEP are in part due to continuous negotiation and strategy building with government authorities responsible for rural development. From its inception, the organizers of NEP involved local health authorities, especially doctors and specialized workers in the field of nutrition and family planning. The first booklet produced to be used as a basis for training, "A guide to nutrition", in fact was prepared by a medical doctor responsible for nutrition at the local health office. The doctor herself with special assistants led the first training programme for the members of the University Women's Organization. This basic course concentrated on nutrition and aspects of health of children, followed by demonstrations in selecting, preparing and cooking locally available ingredients. The graduates of this course formed the first batch of trainers when NEP was carried out in the selected villages.

With the booklet, training experience in methods of presentation, some supporting visual materials like slides and charts, and skills in the demonstration of cooking, the first

batch of trainers embarked on NEP as described in the first stage of the programme. The programme was started in October 1977 and lasted until October 1978.

As described in Section A of this paper, a sample of primary school students was surveyed. The mothers of these children were the prime targets of the programme. Most of these mothers had children under five; so with some mothers from outside the sample with children under five, the programme was designed to serve the needs for nutrition education related to primary school children and special programmes for under five.

Concentrating on the first two objectives of NEP (see section B, part 3), the teaching and learning process followed a fixed pattern of giving information and demonstrations on the preparation of food.

The complete course consisted of 12 main topics. These topics are sequentially presented in 30 sessions of 2 to 4 hours including practical sessions, i.e. demonstrations of cooking during a period of approximately 11 months with one month for intensive evaluation.

There were also monthly home visits to the "cadres" during which the children under five were weighed. This activity was designed to enable a continuous monitoring of the mothers' understanding of what had been taught. Problems were identified for discussion in the next session.

From time to time a cooking competition was held to encourage participants to demonstrate their knowledge and skills but at the same time to evaluate the success of the previous lessons.

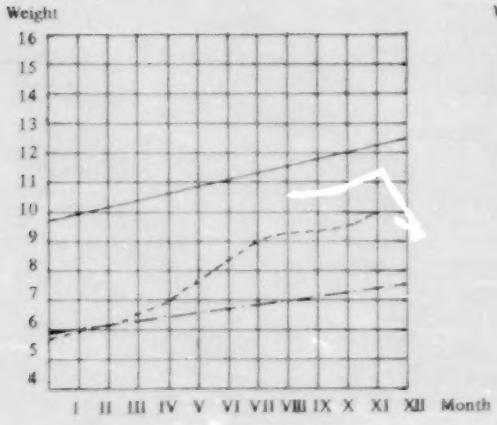
Approximately 80 persons per village were regular participants which means that the project has trained about 320 persons in four villages within one year.

Some of the results of the programme are obvious from the analysis of the final evaluation survey, which are discussed in part 5.1.

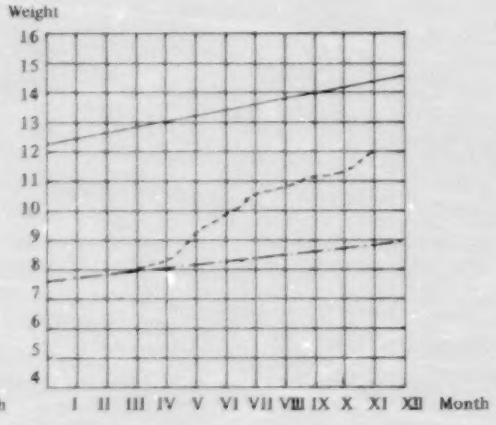
How people benefited from the NEP. One simple indicator of whether mothers have understood and practiced the principles for improving family nutrition is by having a regular programme for weighing the children under five years. An apparent steady increase of weight can be seen from the following graphs. All graphs show that when the programme was first started all the children in the age-bracket of 1 to 5 were quite near the border line for malnutrition. In fact children of 2 to 3 years of age and 3 to 4 years were on the border and below the border line respectively. There were two periods during the process of the entire programme where the increase of weight was not significant. Firstly, at the beginning of the programme (months III – IV) and, secondly, during months IX – X. This is understandable due to the fact that it takes time to introduce new habits to rural families. The slow increase during the months IX – X was caused by the fasting period approaching the Moslem New Year.

It must be noted, however, that despite the credit which must be given to the education programme, NEP has adopted as its main incentive for intervention free distribution of NFD Milk to the participants of the programme. The economic situation gave NEP no other option but to adopt a policy of milk distribution. It was found that the

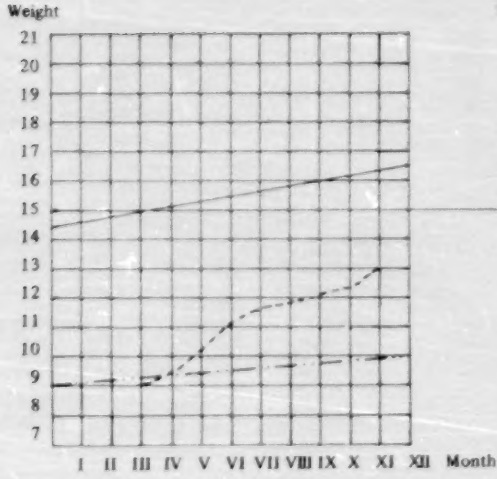
Weight gains of children during the NEP



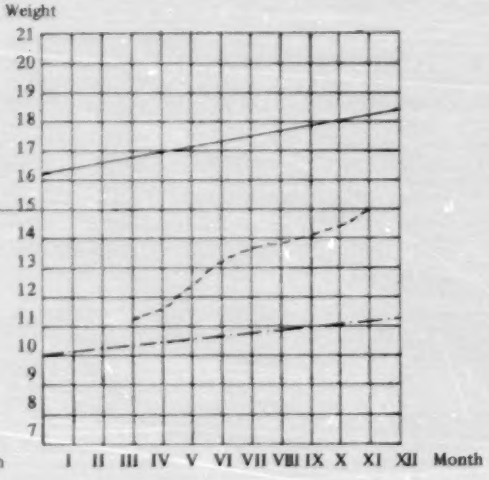
Graph for children (KMS) of 1 - 2 years



Children of 2 - 3 years



Children of 3 - 4 years



Children of 4 - 5 years

= normal growth curve for children (KMS)

= NEP feeding intervention

= Malnutrition border line

weight = in kilograms

month = monthly weighing

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people are economically incapable of having a balanced protein intake. The following data gives some indication of the situation. Out of 118 people interviewed in the process of evaluating the NEP, 59.3 per cent have to buy their daily food; 95.8 per cent have to buy food containing vegetable protein – although 62.7 per cent of them stated that they live from cultivating the land. When students traced this further, it was found that those who have some land are mainly interested in planting tobacco or vegetables for sale. Most of the others have land holdings so small that it is impossible to plant a variety of plants and vegetables which can be useful for the family. Any inch of land available will be cultivated with plants that can be sold for money, although the income is insignificant when it comes to the purchase of food. It has become obvious also that planting a variety of food crops for the family diet is not a common pattern among the people.

This was the background for free distribution of milk to children. This incentive became a great attraction for people to join the programme, but makes evaluation rather complicated. The other problem was the rate of weight increase as shown in the graphs. By the end of the programme, although already significant increases in weight had occured the children were still below the normal healthy curve. Should free distribution of milk be continued and is it a good policy? If not, could there be a new substitute to milk and would it be acceptable? This problem has been smoothly solved in a similar programme in West Java for the labourers of tea plantations.

It was agreed that plantation staff on good incomes should buy goats to be looked after and bred by the labourers on a "property-sharing" principle. The labourers are entitled to milk the goats for their children and families. While the principle is a sound one, in villages where there are no people with good income, other ways must be found to purchase goats, whether from the government or local industries or some other source.

The effectiveness of the programme itself. The students decided when collecting the data for this purpose that they should employ a correlation analysis by treating "application at home of materials studied by mothers during the programme" as the dependent variable; and then other factors identified as influencing the dependent variable as their independent variables. These are: (1) educational background of parents; (2) husband/father's work; (3) number of dependent family members; (4) motive for participation in NEP; (5) active participation; (6) husband's attitude towards wife's participation in the programme; (7) course materials; (8) presentation methods by trainers; (9) frequency of training; and (10) available food resources.

Utilizing both Kendall and Chi-square techniques for testing the degree of significance of the relevant items, the students found that the correlations of the dependent variable (Y) to independent variables (X-1 to X-10) were as follows:

The analysis shows that (a) husband's work; (b) number of dependent family mem bers; and (c) motive for participation in NEP are all factors having no significant correlation with whether or not the mother applied her knowledge of nutrition at home. What really influences the mother to apply her knowledge are her active participation in NEP and her husband's supportive attitude; frequency of training given and simple (easy to understand) presentation of programme content, and whether or not the mother can afford locally available food. It is known also from the repondents that they didn't

Correlation of	*Score*	*Interpretation*
$Y - X_1$	0.179 (t_c)	VS
$Y - X_2$	8.26 (X^2)	NS
$Y - X_3$	0.091 (t_c)	NS
$Y - X_4$	0.08 (t_c)	NS
$Y - X_5$	0.12 (t_c)	VS
$Y - X_6$	0.12 (t_c)	S
$Y - X_7$	0.15 (t_c)	VS
$Y - X_8$	5.73 (X^2)	NS
$Y - X_9$	0.13 (t_c)	S
$Y - X_{10}$	0.12 (t_c)	S

Notes VS = Very significant; NS = Not significant; S = Significant; t_c = Kendall; X^2 = Chi-square.

encounter difficulties in understanding what was taught and demonstrated to them during the training programme.

This includes:

a) A better understanding of the importance of preparing a balanced diet derived from: (1) cereals; (2) meats, fish, eggs; and soya bean; (3) vegetables; (4) fruit; and (5) milk, which has been widely propagated by the Government as the "four is healthy, five is perfect" nutrition principle;

b) A special knowledge of how to prepare baby and children's food and better ways of caring for them;

c) Practical skills in cleaning rice, vegetables and the method and length of time in cooking to preserve the needed vitamins; and

d) A better knowledge and skill in alternative ways of using cassava as a substitute to rice.

New dimensions: action-programme. At this stage those who have been involved in planning and implementing NEP were able to learn at first hand several important realities of the rural areas. The complex nature of the chain of rural poverty can be broken only by another chain of inter-related activities – thus an interdisciplinary approach cannot be avoided. The method of intervention identified and introduced was *Home garden intensification*, consisting of an integrated packet of training in content and methods and a demonstration plot. The target set for this programme is to involve more families in utilizing the land surrounding their homes as home-gardens to plant a diversity of vegetables containing protein and vitamins. This will in turn increase the calorie and protein intake of the families. Special methods in utilizing natural fertilizers such as compost will be introduced to increase production. Village youth, especially school

drop-outs, will become the main targets for training as local extension workers to assist in the programme.

The second new programme was the *Child-to-Child Programme*. The important role of the child in looking after his brothers and sisters is to be utilized in helping NEP with its programme for children under five. The main target of this programme is primary school children of classes IV to VI. They will have special sessions on Saturday to make them capable of encouraging their families to prepare a balanced diet at home and detecting as early as possible any signs of malnutrition of their friends, brothers and sisters.

Special booklets are prepared for this purpose including assignments in simple data collecting about food prices, a census of children under five in their surroundings, water resources and supplies and even how much water was regularly used in their homes. Simple sanitation practice and how to give first aid to their brothers and sisters with symptoms of diarrhea are also included.

Students invited headmasters, teachers and local health officers to discuss their plans and jointly write and try out the study materials for the children. Nineteen students from different schools and villages are themselves supervisors of this programme.

The third new programme was designed to give "after care" to mothers who have finished their basic training in NEP. This is to ensure that what has been learned is not forgotten in the course of time. As most of them are illiterate, NEP cannot rely on printed materials. An adult education programme was established called NEP Study Groups. This is a group of listening, *watching* and *discussion* materials studied in NEP Courses but presented in a "drama-type" course with tape-recorded dialogues about the 12 basic topics of NEP. Old slides photographed during their demonstration classes as well as new ones (demonstrating experiences in other places) were projected to stimulate discussions. NEP cadres are specially trained to lead discussions about the learners' experiences in implementing in their homes what they have learned earlier. Such discussions were also recorded to be used as case studies and feed-back for monthly meetings of the cadres with students, to determine special sessions that might possibly be undertaken with these earlier graduates. In these evening study groups both the women and their husbands are invited to share their experience and opinions.

Co-operation between various development agencies. This paper has sporadically mentioned co-operation between NEP, rural people, (children, parents), teachers and government officials. Even though Community Service is one of the threefold "Missions of Universities" in Indonesia, a service programme such as NEP in a private university could be regarded as too expensive for the limited funds available. The co-operation of philanthropic organizations was, therefore, sought in meeting part of the expenses of NEP. One organization, as mentioned earlier, is willing to give free milk for children under five.

So far NEP has not considered the possibility of co-operation with industries. This has been partly due to the goal of the programme itself – the creation of an environment of self-help and mutual co-operation through the provision of education and training in the skills of nutrition that might lead to improvement of the quality of life of the rural

people. It must be noted, however, that NEP has recognized the need to improve the quality of soyabean cake (*tahu* and *tempe)* produced in local home industries. This forms the major source of vegetable protein. The students of biology and technology have been asked to look seriously into the possibility of a better-quality production by home industry as this might attract outside markets, and therefore, the need for increased production. But, here again, it is an anticipated growth by and for the people themselves, rather than an invitation to outside investment which might or might not take into consideration the basic needs of the rural people.

One of the most satisfying areas of co-operation in the entire set-up of NEP, was with the professional people, such as doctors, agricultural extension workers and artists. The study materials, although produced by students, were improved and, in the case of recorded lessons, produced professionally by artists with the assistance of the Government Radio Station in Yogyakarta. Such a standard production can be transmitted when needed by any radio station for NEP purposes.

Community participation and leadership. NEP would not have been launched without the positive response of teachers, village heads, and women and children to the programme. Participation in the planning and implementation of the programme by village heads, informal leaders and teachers was crucial for success. They were the ones that NEP relied upon for advice on implementation and evaluation, and for giving encouragement to the village people to participate. Those leaders who are capable of undertaking the role of trainer were later on selected to undergo a special training programme which qualified them to become trainers, actors or even supervisors in the Adult Study Groups. In fact the students depended heavily on the community leaders (i.e. village cadres). This was because they were bound by the design of the programme to do so and also simply for practical reasons. As villages are within 20-30 km from the university campus, study groups can only be held in the evenings to ensure that both husbands and wives can participate.

The land allocated for demonstration plots, school classrooms for special classes, teachers' time for voluntary upgrading courses and later on for teaching in and supervising the training programme were also invaluable contributions without which the programme would not have meant anything. Such spontaneous enthusiasm could be attributed to the relevance of the programme in meeting the needs of the participants. (Such an interpretation is consistent with the correlation analysis that there is no significant correlation between motive to attend the programme and effectiveness of the programme.) This, however, still leaves a worrying fact unanswered, i.e. the suspected dependency on free distribution of milk and milk as an incentive for attending training programmes.

While the NEP is developing participative planning and leadership in its simplest form, the programme still has to help nurture in the participants the growth of decision making skills and the "sense of ownership" of the programme. The process is not as simple as preached by outsiders through concepts and strategies of participatory planning and management, self-reliance and the like. In a shame culture combined with a long tradition of patron-client relationships, shame of wrong-doing, hesitation, and reluctance to hurt others can result in psychological pressures to be oversensitive to the feelings

of others. One has to take seriously the fact that even though these are common characteristics of human beings everywhere, *the weight* and *the meaning* people give to them are really very different. The balance between these psychological pressures for safeguarding interpersonal relationships and the needs of the programme for local leadership and clear-cut decisions is not easy to achieve.

This might be a good explanation of why such societies are classified as good but passive planners rather than active implementors of what has been planned, since accurate implementation needs effective control, which is felt to be too demanding, psychologically. When bureaucratic streamlining is at stake, keeping special good relationships with the authorities is considered more important than accurate and efficient implementation plans. It is even more vital if those in such relationships happen to be people who are disadvantaged educationally and financially. The result of pushing the disadvantaged to the forefront may be to create a new dependence rather than self-reliance.

This raises new concerns about how NEP can plan an integrated cultural strategy of "together with" the people rather than imposing upon them development strategies, to improve their quality of life.

Implications for the teaching – learning process in the university

Inter-relating formal and non-formal education. All the activities described earlier, especially the experience gained in NEP, have good potential for integrating, not only inter-relating, formal and non-formal education into a system of higher education. There were already occasions during the implementation of NEP when students were invited to give seminars about the programme in courses such as food technology at the agricultural faculty, and research methods in education. This was done because part of the lectures in those subjects mentioned were relevant to what was going on in NEP.

In a different project using the same design as NEP, but more related to helping teachers develop their professional skills, students were allowed to use data which they had collected to write their graduate theses. By design, this latter project has a built-in procedure to allow theses writing on the basis of students' involvement in research design and data collecting. Different task-forces were established according to identified needs and led by staff members to study how practical classroom problems can be overcome. Interested graduate students of education were invited to participate in collecting data and formulating strategies for special upgrading courses for the teachers. By such involvement students work from the beginning with lecturers who usually become their thesis advisers. They were also trained to design upgrading courses but are allowed to use the data in a different manner, i.e. to solve an academic problem in their field of specialization by writing a thesis.

As stated earlier, NEP has not gone to this extent yet. The bottleneck is caused by the traditional view of university academics and administrators about the importance of independent disciplines. Still, a wide variety of possibilities for undertaking interdisciplinary research into rural development problems has been made obvious through the description of NEP activities.

Health and nutrition education

The need for increasing protein sources for the rural people at a reasonable price, for instance, will require an integrated effort in studying:

a) Home industry producing soya bean cakes (*tahu* and *tempe*), regarding what quality of soya bean, where and how to plant it and in what quantity; b) Price survey and marketing systems and quality control; c) Implications for improvement of appropriate equipment and technology for production to cope with demand and quality; and d) Management of production and personnel and, more important, management of finance from the point of view of cost-benefit analysis, savings and further investment.

Apart from these technical aspects, there are a number of social and cultural aspects of society that should get the attention of a university, if programmes of modernization and development are to make the local population active, responsible and creative participants and not passive recipients. For example, how could illiteracy be eradicated and what follow-up programmes should be designed, not only to reinforce the usefulness of the new knowledge and applicability of skills, but also to enrich cultural values relating to personal development and dignity.

In such a context, students and academics from different disciplines and scientific perspectives would be required to contribute to the solution of the basic problem, i.e. rural poverty. At the same time their initial strategies and solutions will be challenged by realities not found in imported text-books. Service to society, as a function of the university, will therefore, have to be integrated with the other two functions, extension of the frontiers of knowledge (i.e. research) and transmission and dissemination of knowledge (i.e. teaching).[1]

Enhancement of development-oriented awareness of students and promotion of their participation in development programmes should, therefore, become the crux of the teaching-learning and research process, not merely the function of a traditional community outreach programme.

The nature of curriculum development will reflect the integration of theory and application with stages of: (1) data collecting related to the nature and continuum of difficulty of the discipline studied; (2) exercises in analysing the data when statistical techniques are introduced and, finally, (3) utilizing these data and experiences in the writing of graduate theses.[2] It will become the important role of the lecturer to explicitly differentiate during the process of interaction with his/her student, the correctness of a theory and its applicability for solving a problem or analysing a relevant case that is being studied.[3]

Integrating formal and non-formal approaches to university teaching-learning and the research process should, therefore, provide the basis to develop in the students an analytical mind and solidarity with the people in need of his professional help.

1 Compare Unesco ROEAP, *Regional co-operation in higher education in Asian and Oceania*, Bangkok, 1980. p. 20-23.

2 Compared Joesoef Daoed (Minister of Education of Indonesia), *Normalisasi Kehidupan Kampus*, Jakarta, 1979, (Dghe, Document DM – US-2), p. 15.

3 Ibid.

HEALTH EDUCATION FOR RURAL DEVELOPMENT: FINDINGS OF RESEARCH

by

Evelina A. Mejillano*

The protection and promotion of health is of paramount interest in the development of any country. Health is considered one of the objectives of the developmental process of any country. Good health is accepted as an essential thread in the fabric of quality living. The United Nations Statistical Commission has recommended nine major components of the index of levels of living which may be regarded as some measures of development. Number one in the list is health, followed by food consumption and nutrition, education, employment, housing, social security, clothing, recreation and human freedom.

The importance of health points to the need for health education. In recent years, the need for health education has been given increased recognition because it is more economically feasible, and since prevention results in the reduction of the incidence of diseases and other health problems.

The present philosophy of health education is realistic and functional. It encourages people to live effectively and enjoyably while it teaches and prepares them to meet the many problems of everyday living.

The challenge of health education today, especially in rural areas, is to develop healthy citizens who will rate health as an asset so they can live most and serve best. Health determines the capacity for performance, interest and enjoyment. Specifically, health education is directed to the development of physically, mentally, and socially adjusted individuals who are free from diseases and remediable defects so that they can participate in community development. Through health education people can be provided opportunities or experiences and activities so that they will develop correct health practices, positive attitudes and skills which will promote better quality of life.

In many rural areas the people are plagued by a low standard of living which is caused by low levels of productivity and income. Health is affected by the standard of living, and health in turn affects all other conditions. The development of rural communities, which constitute about 70 per cent of the Philippine population, is one of the thrusts of this country today. Specifically, the government directs its efforts towards providing rural communities with formal and non-formal education directed to improving their health, nutrition, income and housing conditions. Through the co-operative programmes of agencies such as health, agriculture and industry, the people in rural communities are given the opportunity to acquire marketable skills in order to increase their income and hopefully obtain better health. There are on-going projects integrating agricultural and nutrition programmes which promote the production and consumption of food with high nutritive values. Community workers who are oriented to health

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education live in the rural areas. In the community where they live, they can readily spot diseases in the early stages so that complications are prevented and early treatment is sought.

Through health education, the high cost of medical care is minimized through the systematic elimination of diseases. In many parts of the country the 10 leading causes of death are as follows:

1. Pneumonia;
2. Tuberculosis;
3. Gastro-enteritis;
4. Malnutrition;
5. Bronchitis;
6. Peptic Ulcer;
7. Stab wounds;
8. Schistosomiasis;
9. Nephritis; and
10. Malignant neoplasm.

Nine of these are preventable. With proper health education and environmental control, these diseases can be controlled, thereby lessening expenses for medical treatment.

The use of herbal medicines on a scientific basis is being encouraged. Research is in progress on the use of plants and herbs by the native "medical practioners", called *herbolarios* or *hilots* in the rural areas. *Herbolarios* and *hilots* are encouraged to join training courses for paramedical health workers.

This paper examines and reviews some research on rural development, particularly on health education for rural development including formal and non-formal education. The main purpose of the review is to list some relevant findings, conclusions and recommendations of this research. These data should give a description of the present condition of rural communities as well as the different processes of rural development in the Philippines.

1. Syncrisis: The dynamics of health; an analytic series on the interaction of health and socio-economic development[1]

Wooley and others conducted a country case-study in an attempt to identify important problem areas in health and socio-economic development for the Philippines. The study is based upon the hypothesis that there are unifying socio-cultural factors that influence operation of the economic, government, education and health care systems. Many kinds of data were used and they suggested that the Filipinos recognize the right of all individuals to share the limited wealth around them.

The study found that the following seemed to be the major areas of concern:

1. Dealing with a social system that, on the one hand, encourages modern thinking and beliefs, but on the other hand denies the realization of such aspirations;
2. Dealing with a high rate of migration to the country's urban areas (especially Manila) without a corresponding adequate mechanism for educating and employing the migrating population in the urban setting;
3. Dealing with the overall poor nutritional status of the population, which is the result of socially-induced subsistence agricultural production and consumption;
4. Dealing with an inability to implement necessary government programmes, owing to voter preferences for pork-barrel allocation and general irresponsibility on the part of voters and policy makers alike;
5. Dealing with poor health and sanitary facilities that are a direct reflection of the government's inability to institute and maintain meaningful programmes and facilities that grow out of social and cultural traditions;
6. Orientation to short-term, immediate goals rather than future goals; and
7. Dealing with the absence of a unifying national idealism that fosters concern for national rather than individual interest.

The following areas for potential action are recommended, with the realization that there are many ways to approach and solve problems:

1. Standardization of development policy whereby future projects would be freed from present development contingencies and debt obligations;
2. Creation of a national marketing system to stimulate fishing and agricultural production. This sytem should reflect the nutritional and economic needs of the population;
3. Upgrading present rural development programmes, mostly through administrative streamlining;
4. Slowing urban immigration by enhancing the rural life-style, and broadening educational/vocational opportunities for urban migrants;
5. Securing more reliable means of collecting revenue;
6. Stabilizing the economy and educating political decision-makers;
7. Administrative reform of government programmes – including health;
8. Improvement of data collecting and analysis systems; and
9. Institution of a workable planning system.

2. Beliefs about tuberculosis in Bay, Laguna and their implications to health eduation[2]

In the Philippines as in other developing countries, diseases, superstitious beliefs and other health problems still present many challenges. There is continuing demand for their study. Some require community action, while others are individual problems.

Bailon studied the beliefs of rural people about TB. Tuberculosis is considered to be one of the major health problems of the world. In the Philippines, TB remains a major public health problem. Over the past several years the disease has ranked fourth among the leading causes of death.

Much is known about the disease in terms of prevention, diagnosis and treatment but there is a wide gap between knowledge about the disease and the application of this knowledge. A big obstacle to the success of the TB control programme is the cool response of the people. Thus, it is important that the programme be based on a careful community diagnosis, especially on finding out the people's beliefs about TB.

This study aimed to determine beliefs about TB. It attempted to provide baseline data necessary for redefining both content and method of the TB health education programme for rural communities.

A questionnaire patterned after Jenkins' "Semantic Differential for Health" was used to interview 323 respondents. The number and percentage of respondents subscribing to a particular belief were determined.

The study found that the respondents felt no personal susceptibility to TB, which is viewed as a not-too-serious or life-threatening disease. TB is regarded as a dirty and embarrassing disease; not often thought of or talked about. The respondents believed that the disease afflicts adolescents and adults. It has a multiple causation, is spread through direct and indirect contact, and is preventable and easy to treat.

The following are recommended in the light of the findings of the study:

1. The findings of this study have to be translated into culturally-based instructional materials. This task requires the expertise of a health educator who should also take charge of information dissemination as well as the evaluation of the entire tuberculosis health education programme;

2. The content of the tuberculosis health education programme should focus on making the people aware of the seriousness of the disease, on making them feel personally vulnerable to the threat of the disease, on making them see the relevance of tuberculosis control to their personal goals in life and on erasing the stigma attached to the disease;

3. The community through its leaders should be involved in tuberculosis control activities. Responsibility should be given to them in case finding, prevention and supervision of home treatment of diagnosed cases;

4. The patient and his family should be an important target of the health education programme. They should be made to feel responsible for preventing and

controlling the spread of the disease. Filiponos are family-oriented, not state- or society-oriented. Thus, the tuberculosis health education programme should discuss the disease – its effects, benefits of prevention, responsibility for early diagnosis and treatment – from the perspective of the family. Continuous chemotherapy rather than patient isolation, which antagonizes the patient and his family and increases the stigma of the disease, should be the focal point of patient and family education. Isolation, although necessary for "open" or bacteriologically positive cases, is contrary to the Filipino value of close family ties and for families living in one-room dwellings may be downright impossible, if not unacceptable; and

5. The organizational aspects of the tuberculosis control programme should receive equal attention. Health education efforts to make the people respond favourably to the programme would fail if such problems as long waiting time, inconvenient hours and location of service facilities are not corrected. Likewise, good interpersonal relationships with patients, their families and the public at large should be cultivated by health workers. Courteous service, listening to patient's problems, answering questions and dealing with immediate concerns of the patient and his family, follow-up of missed appointments and the like would do a lot of to ensure the public's co-operation with the tuberculosis control programme.

3. The superstitious beliefs of the Muslims of Sulu and their implications for health education[3]

Kenoh noted that often efforts to introduce new knowledge and ideas about health produce anxieties and hostilities among the people. This is often found in communities where traditional beliefs and practices are deeply rooted. Superstitions and their adverse effects delay rural development. This is shown by health conditions in the rural areas.

Kenoh identified the superstituous beliefs of the Samals and Tausugs in Sulu. The superstitious beliefs which were included in the study were related to illness during pregnancy and childbirth, infancy, childhood, and adolescence; and death. He also sought to determine the implications of these beliefs for health education.

The method used for gathering the data was the bibliographical research technique supplemented with the personal experiences and observations of the researcher and interviews with 30 respondents.

It was found that the respondents attribute illness and death to the work of evil spirits, ghosts, vampires and their agents. Because of unreasonable fears, ignorance and trust in magic or chance and false conceptions, the people seek refuge by performing rituals and wearing charms for prophylactic purposes.

Many of these superstitious beliefs if allowed to persist will further influence the people's health behaviour and adversely affect the development of their community.

The following recommendations are proposed which might be helpful in eradicating superstitious beliefs:

Health and nutrition education

1. Health education should include discussion and clarification of superstitious beliefs related to illness, treatment and disease control;

2. Health education should give emphasis to the causes of communicable and non-communicable diseases;

3. Adults' and mothers' classes should be organized and utilized to disseminate scientific information related to nutrition, maternal and child health, and other beliefs that affect community development;

4. The local midwives and local medicine men should be trained by the Ministry of Health in the application of modern medicine to make them better qualified to provide health services to the rural people; and

5. The mass media should be encouraged to disseminate health and scientific information about illness and death. The local dialect should be used.

4. Filariasis control as an entry point for community development among the Iraya Mangyans in Oriental Mindoro[4]

Bongco observed that there is an urgent need for a filariasis control programme which may serve as an entry point for rural development among the Iraya Mangyans in Oriental Mindoro, which is the seventh largest island in the Philippines. The Mangyans are the tribal people of Mindoro.

Filariasis is a major disease plaguing the Mangyans. The disease is caused by nematode parasites called filariae, which are transmitted by insects. This disease has caused physical debilitation and loss of economic productivity among the Mangyans.

The study reviewed and analysed the community health survey and filaria survey conducted in 1975 and 1976, identified the factors contributing to the prevalence of the disease, proposed a health education programme for filaria control, and suggested using this filaria control programme as an entry point for community development.

The health survey disclosed that the leading causes of illness in this area are pneumonia, gastroenteritis and tuberculosis. The clinical survey revealed that the prevalence rate of filariasis is from 25 per cent to 38 per cent.

The socio-cultural factors which contribute to the high incidence of filariasis are attributed to the widespread discrimination against the Mangyans among lowlanders. The Mangyans are mostly illiterate and they live in the hinterlands. They believe in evil spirits and they are not aware of the cause, transmission and control of filariasis or other diseases. They have no knowledge of the part played by dirt, exposure, physical contact, mosquito bites and other factors in the spread of disease.

There is an urgent need for a filariasis control programme which includes health education. This programme could serve as an entry point for rural development among these people.

Through active participation of the people, men and women, young and old, in the identification and solution of the problem, they may develop the knowledge and skill

to solve the filariasis problem and learn to use a similar approach to the solution of other community health problems. Furthermore, realizing that health is dependent on social and economic development and also contributes to it, all agencies assisting the Mangyans should include primary health care in their development programmes.

Considering that local resources and personnel are important in primary health care, there should be a close linkage between primary health care, the development of indigenous health technology and indigenous traditional medicine in order to adapt them to the socio-cultural context of the Mangyan community.

5. Folk medical practices in a barrio: their implications for the rural health programme[5]

This study was undertaken with the aim of identifying and analysing the folk medical practices of the people in a barrio (rural village) of La Carlota City in the province of Negros Occidental. It endeavours to understand how these practices meet the medical needs of the people and how they influence or affect the acceptance or rejection of the modern medical practices being advocated in the rural health programme.

The researcher believed that the results of this study could provide information which might assist both medical workers and policy-makers in the implementation of the rural health programme. It could also provide a basis for the assessment of existing policies and strategies of the programme.

The data for this study were obtained through participant observation and through interviews with both the folk healers and other barrio residents.

On the basis of the empirical data gathered, it was found that the people classify diseases as either naturally or supernaturally caused. The former can be treated by applying the family's knowledge of folk medicine, or by consulting a folk healer or a medical doctor. It was also found that the folk healers are known by the general term of *siruhano*. However, various terms descriptive of their line of specialization are also used, namely: *manogluy-a, paltera, manoghilot, manogbutbut, arbularyo, babaylan* and spiritual healer.

The findings of this study strongly indicate that modern medicine cannot be expected to completely supersede folk medicine because of several reasons, namely: (a) the efficacy of herbal decoctions being used; (b) the high cost of modern medical services and medicines; (c) the friendly and informal relationship between the people and the folk healers; (d) the belief in the supernatural; and (e) the inadequacy of transportation and communication facilities.

An analysis of the folk medical practices of the people in relation to the rural health programme yielded the following implications: (a) a more thorough and scientific investigation of the herbal decoctions used by the people can result in important medical discoveries; (b) since folk healers are regarded very highly in the community, their being trained to provide scientific first aid can make the people more receptive to health innovations; (c) an understanding of the culture of the people can assist medical workers in choosing methods to realize the goals of the rural health programme; (d) the attitude of the medical workers towards the people can greatly affect the reception of the health

innovations being introduced; (e) an increase in the personnel of the health centre can encourage the people to avail themselves more of the medical services offered; and (f) health education of the masses should not be neglected.

6. Health practices in a rural community[6]

In any economic development enterprise rural health serves as one key in the transformation of rural areas and people. Tiglao studied the health practices in a rural community which has undergone marked changes within a decade. "What were once vast agricultural lands have been converted into industrial sites, school sites or land and housing developments. The number of professionals has increased and people practice more autonomy with regards to local government."

The community which was the site of the study was the field training centre for all categories of public health personnel, where they demonstrated practical procedures for carrying out the functions of a modern rural health service. The centre also developed and improved other public health services such as environmental sanitation, communicable disease control, nursing services and health education.

The objectives of the study were to determine the changes in certain health practices of the people after a 10-year intensive public health programme and to study the dynamic of change.

A house-to-house survey of the total population was conducted in 1950 and a resurvey of a random sample in 1960. Health indices were established, and the 1950 and 1960 data were compared, using the mortality and morbidity rates, the environmental practices of the people, the maternal and child health practices, the utilization of health resources, completeness of birth registration, dental health practices, physical changes in the community such as the health centres, and the qualifications of the health and school health personnel.

It was found that there were general improvements in the health practices of the people but the incidence of parasitism hardly decreased in spite of the increase in the number of toilets. This seemed to indicate that in addition to the adequate use of toilets, the practice of personal hygiene and the availability of an adequate water supply may also help in the solution of environmental health problems.

The study also found that there was a marked increase of expectant mothers who were under the care of professional health persons. However, a good number of mothers went to the indigenous health workers for delivery. The reason given was the inaccessibility and unavailability of health professionals. "A practical solution seemed to be the training of indigenous health workers in asepsis and to make them refer abnormal cases to hospitals," the study concludes.

The study also found that the hemoglobin count among pregnant mothers and the nutrition of school children were still below par. It seemed that nutrition education should go hand in hand with food production.

The immunization programme in the community needs to be strengthened further, as sporadic outbreaks of disease have occurred in the past.

The percentage of decayed, missing and filled teeth has increased. This may be due to the intensive sales campaigns of soft drink companies. Bottled soft drinks were found in almost all the food shops.

The registration of births and deaths has improved during the decade, and it was noted that the unregistered infants were those who died soon after birth. They were found to have death certificates but no birth certificates. It was suggested that the co-operation of other agencies and the indigenous midwives and community leaders should be sought.

The study of the factors related to acceptance of modern health practices and the dynamics of change showed that changes in health practices could not be attributed only to the intensive health programme. The researcher was aware that health education is a part of a scheme for total community living.

From the findings, it can be concluded that after 10 years of intensive health education work, there were definite changes toward more desirable health practices among the people in the given area of study. The factors which seemed to influence the acceptance of health innovations were: educational attainment, occupational level, number of school children in the family, number of married children in the family, size of the family, proximity to the health centre, civic consciousness and membership in some reference groups.

This study suggested that planners and implementors of health and other programmes should take a total view or should see health as a whole. They should consider the needs of the total man as well as the needs of the total community. A health and health education programme to be systematic, substantial, continuing and reflective cannot be planned as a separate entity. It must be interrelated and must collaborate with other community programmes.

Furthermore, it is being realized that the key to prevention of public health problems lies in changing and controlling certain aspects of the environment. As the environment is improved, the people change. The change within the people in turn stimulates further modifications in the environment and so the cycle continues. It is the responsibility of health workers and other community workers to take some leadership in stimulating such desired changes by serving as agents of change.

7. Perceived roles of teachers as agents of change in health education[7]

Teachers have multiple roles to play. Their work is not only confined to the classroom but also extends to the community. Paguio studied the perceived roles of teachers as agents of change in health education.

She made use of a normative survey. Questionnaires were administered to teachers in rural and urban schools.

The study revealed that the teachers perceived 5 major roles as change agents – group leader and active participant, helper in clarifying values about health, facilitator, member of the health education profession and co-ordinator of the school and community health programmes.

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There were some specific roles which were most highly perceived by the teachers. These were the following:

1. Listen to sound suggestions and respect the thinking and ideas of others;
2. Use "we" and avoid the use of "I" and "you" which tend to create a separation between the teacher and the group;
3. Recognize the importance of maintaining a high level of personal health as an example for others to follow;
4. Accept changes and adjust accordingly to plans or projects;
5. Stimulate others to see a need for improvement or change in their undesirable health practices; and
6. Use motivation in health teaching so that desirable changes in health behaviour take place.

8. School and community resources for health education program[8]

Health education rests on the premise that scientific facts do not make an impact on health development or health promotion until they have been disseminated, accepted and have motivated people to action. Every community has a vast array of health resources which when fully utilized will contribute to its development.

A study of the school and community resources for a health education programme in Monkayo, Davao was conducted by Hofilena. The researcher gathered her data by interview, documentary analysis and on-the-spot observation.

The study revealed that the Rural Health Unit is the government health agency with full-time, professionally trained personnel who are directly responsible for the health of the public. There were other government agencies whose main function is not health, but great benefits can be derived from them through proper co-ordination. Examples of these agencies are the Presidential Arm for Community Development, the Agricultural Productivity Commission and the Bureau of Plant Industry.

The following private agencies regard health education as one of their functions and they seek to complement and strengthen the work of other related agencies:

1. The Philippine National Red Cross;
2. The Girl and Boy Scouts Organization of the Philippines, Future Home Makers of the Philippines, and the 4-H Club. These youth organizations provide enrichment of character, development of personality, training in citizenship and community service. All phases of health and safety are emphasized in their development programmes;
3. The professional men and women in the community share their time and effort for health education. They act as resource persons, consultants, and health demonstrators;

4. Private business and industry give their share to health promotion in the community; and

5. The civic and welfare groups are also potent forces in community health development.

Hand in hand with these community health resources are the school resources.

9. Iron absorption from typical Filipino meals[9]

Current research conducted by the Food and Nutrition Research Institute focuses on countryside development. The research primarily seeks solutions to meet the food and nutrition needs of the majority of the population, which lives in rural areas.

Nutritional anemia, which is a deficiency disease due to sustained low levels of dietary iron, is widespread and seriously affects pregnant and lactating mothers, infants and pre-schoolers.

The Food and Nutrition Research Institute studied the iron absorption from a typical Filipino meal consisting of rice, fish and vegetables served with *calamansi* juice, which comes from a native sour fruit that tastes like a lemon.

It was found that more iron is absorbed from a meal of rice, fish, vegetables and *calamansi* juice than from a meal consisting of rice and leafy vegetables alone. The Radio-Isotope Machine pointed out the remarkable increase in iron absorption when fish or meat, together with foods rich in ascorbic acid or vitamin C are included in the diet.

It was also found that more iron is absorbed when the body stores are low. A pregnant woman tends to absorb more iron than a non-pregnant woman who eats the same amount of food. It was also found that phytic acid, a substance present in rice, may hinder iron absorption.

Other inexpensive foods grown in rural communities which may enhance iron absorption in the rice-based Filipino diet are currently being evaluated to help solve the problem of nutritional anemia. The influence of iron absorption from dehydrated beef blood as a high iron snack food is being studied.

The researchers recommend more intake of meat and fish along with green leafy vegetables, dried beans, dried fruits, eggs and liver to combat nutritional anemia.

10. Community Organization for Health Education[10]

The development of a country is dependent upon its people and resources. The Philippines is an example of a developing country which relies heavily on its indigenous resources, both human and material, for its development.

This study is focused on how to motivate the people in the community to organize themselves, adapt procedures and use techniques for the promotion and protection of health.

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The people and their leaders were involved in identifying their own health problems and needs. They planned the strategies to solve their health problems. They identified and utilized local resources and agencies in solving their health problems. A community health council was organized as a strategy in solving the identified health problems and needs of the community.

A group of graduate students enrolled in a masters degree programme in health education assisted the people in the community to identify their health problems and needs through a survey questionnaire. The questionnaire included the socio-cultural characteristics of the community, the health status and practices of the people in relation to nutrition, environmental sanitation and family planning. The questionnaire was in the native language.

The results of the survey were presented and discussed by the community leaders during a community meeting or assembly. The people had a chance to realize their own health problems. They decided to find solutions to their problems.

Through the Community Health Council, the following activities were held:

1. Operation clean up;
2. Film showings on these areas – nutrition, environmental health and family planning;
3. A mother's class was organized;
4. An auxiliary Ladies Brigade was formed; and
5. An action plan based on the health problems and needs identified was developed with the help of the graduate students.

It is envisioned that through these and other activities that will be conducted there would be significant changes and improvement in the people's health attitudes and practices.

In conclusion, this reveiw of research in health education for rural development could be used by those who seriously desire to improve the conditions of the rural communities. From these studies, it is clear that for rural development, it is important to directly involve the people. Social change occurs through the collective action of the people themselves. If people identify and support development programmes being implemented in their community, the attainment of the objective would be greatly enhanced. To further increase the success of these programmes, community planners and change agents should encourage the fullest expression of the people's initiative and creativity.

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